

Acknowledgment

First and foremost, I would like to express my gratitude to **Dr. Hemant P. Soni**, Associate professor, Department of Chemistry, Faculty of Science, The Maharaja Sayajirao University of Baroda. No words can adequately describe my thanks to him, who has patiently supported and directed me throughout this research journey, as well as having faith in me during my Ph.D. program. Despite his busy schedule, he was always encouraging and helpful to me. This thesis would not have progressed to its current state if it hadn't been for his clear and illuminating guidance.

I am grateful to **Prof. Ashutosh Bedekar** (current Head of the Chemistry Department), **Prof. N. D. Kulkarni**, **Prof. S. R. Shah** and **Prof. Anjali Patel** (former Heads of the Department) for approving the permission of work in the laboratory after office hours. I take this as a great opportunity to express indebt thanks to **all faculty members** who have helped me in this course of time.

I acknowledge Science & Engineering Research Board (SERB), New Delhi, India, for support under a sponsored scheme.

My heartfelt thanks to DST-FIST for providing NMR and BET facilities in the Department of Chemistry, Faculty of Science, The M. S. University of Baroda. I express my heartfelt gratitude to all instrument incharge and committee members for their support.

I would also like to extend my thanks to my colleagues **Sucheta De Mondal**, **Himanshu patel**, **Shrish Wagh**, **Mayuri Shaiwale** and **Ajay patel** for technical and non-technical support throughout this academic journey and make pleasant research atmosphere.

I would like to offer my special thanks to my family for providing their unconditional support throughout this journey. This achievement would not have been possible without persistent moral support, encouragement and his inputs by my husband **Dr. Manoj Kumar Choudhary** during Ph.D. time.

Last but not least; I wish to express my gratitude to God for providing good health during this time.



Sanghavi Bindi Shashikantbhai